

DFO-1 Comment

Ajax Technical Review

It is the opinion of the Department that additional information related to alternative open pit development options including other mining methodology must be further explored and presented within the environmental assessment to demonstrate the avoidance of impacts to fish habitats of Jacko Lake that support both the recreational and aboriginal fisheries can not be achieved. It is also the opinion of the Department that additional information related to alternative design options of mine infrastructure and the necessity to relocate Peterson Creek must be further explored and presented within the environmental assessment to demonstrate the avoidance of impacts to fish habitats of Peterson Creek that support aboriginal fishery can no be acieved. Rationale - The Fisheries and Oceans Canada's, Fisheries Protections Policy Statement clearly establishes the requirement for Proponents whom develop activities that may adversely affect fisheries to take measures to avoid and mitigate impacts to the extent possible. The Policy goes further to indicate that efforts to avoid impacts should be explored with the Proponent demonstrating that measures and standards have been fully applied before considering measures to minimize (mitigate) impacts in question. As indicated in Section 2.5 Alternative Means of Undertaking the Project, KGHM Ajax Mining Inc. (KAM) has identified alternatives and evaluated Project options based on technical, economic, environmental and social criteria. KAM goes further to indicate that revisions to the general arrangement site layout have been made based on comments received by public and regulatory bodies. Upon review of Section 17.3 Need for, Purpose of, and Alternatives to the Project, specifically Section 17.3.2.2 Assessment-Natural Environmental Acceptability, KAM considers the current Project design effects on fish acceptable as mitigation measures will be implemented to minimize adverse effects to the extent reasonably practicable. Within Section 17.4 Alternative Means of Carrying Out the Project, specifically Section 17.4.3.1 Natural and Human Environment Acceptability, KAM attests that the Open Pit locations are fixed for both general arrangements Ajax North and Ajax South. Both alternatives affect Jacko Lake Northeast Arm and both require diversion of Peterson Creek. KAM concludes that from an environmental acceptability perspective the two alternatives are considered equal and compensation and reclamation will mitigate effects. This statement is purely from the perspective of KAM and not reflective of the Departments. Section 14.4.4 Mining Method Alternatives, specifically Section 17.4.4.2 Technical and Economic Feasibility, states that "open pit mining produces ore at a fraction of the cost of underground mining." Section 17.4.4.3 Preferred Alternative, states "The grade of the Ajax orebody is too low for underground mining methods alone... in-situ leaching of the ore body is not technically feasible. The deposit is located near surface and mining using proven open pit methods would be more cost efficient than underground mining methods." Section 17.4.6 Open Pit Limits Alternatives, specifically Section 17.4.6.1 Introduction, indicates that "the western parts of the deposit contain some of the highest grade ore at depth...maximizing the extraction of the in-situ resource." These statements appear to be contradictory. Three technically feasible alternative pit designs were considered with Alternative 2, locating the open pit well outside of Jacko Lake. Within this section, KAM concludes that the open pit location completely outside of Jacko Lake is not economically feasible for the Project, specifically from the reduction of the mineral inventory by 88 MT from the unconstrained pit design and by 44 MT from partially constrained pit design, a 3.7 and 1.8 year reduction in mine life respectively. No further

discussion of this option in combination of alternative mining methodology was elaborated upon. Additionally, no other options which avoid impacts to Jacko Lake and Peterson Creek have been presented within the application. As detailed in Section 6.7 Fish Populations and Fish Habitat, Jacko Lake and Peterson Creek provide fish habitat supporting Rainbow Trout. It is well established that Jacko Lake supports a high valued recreational trout fishery utilized intensively throughout the licenced season. Section 6.7.2.1 Regional Overview states “anecdotal reports suggest that Jacko Lake was an important rainbow trout fishery before the arrival of Europeans, and that local Aboriginal Groups fished for rainbow trout and kokanee”. The current open pit design proposes to destroy approximately 20,400 m² of productive littoral habitat within Jacko Lake. Mine operations, primarily through blasting and vehicle traffic, will likely alter the accessibility of Jacko Lake to local, resident and non-resident anglers. In addition, proposed offsetting to counterbalance the impacts to the Jacko Lake recreational fishery have not been proven to be technically feasible and at this time are a concern to regulatory bodies and Aboriginal peoples. As stated in Section 13 Aboriginal Interests, specifically 13.6.1.2 Present Day Practice of Aboriginal Interests, Peterson Creek is noted to be a valued trout fishery for the Tk’emlúps te Secwépemc (TteS) and Skeetchestn Indian Bands (SIB), jointly known as the Stk’emlupsemc te Secwépemc Nation (SSN). Both the inlet of Peterson Creek to Jacko Lake and the outlet of Peterson Creek at Jacko Lake have been identified as historic trout fishery sites by the SSN, with the “Jacko Lake spillway providing an important area for spring fishing using traditional methods”. The current open pit design and other mine infrastructure, proposes to destroy approximately 105,600 m² of Peterson Creek instream and riparian habitats. Technical feasibility measures to offset the loss of this fishery and re-establish the Peterson Creek channel to support a spring trout fishery have not been identified in the application by the reviewer. Similarly Section 17.4.11 Jacko Lake Management Alternatives, specifically Section 17.4.11.3 Peterson Creek Diversion Route Alternatives does not appear to consider redesign of infrastructure to avoid the necessity to relocate Peterson Creek. The Alternative B - Pipeline along the South Route is the only route alignment with Peterson Creek and is considered to be challenging due to the close proximity to proposed mine infrastructure and the resulting narrow corridor and summarily discarded. No alternatives to altering the design and/or the locations of the Tailings Embankment MRSF, the Ore Stockpile or the Central Pond to maintain the existing connectivity of Peterson Creek have been provided. The current assessment of alternative open pit designs does not effectively demonstrate whether other alternatives are available or have been considered, which may include a combination of open pit relocation further away from Jacko Lake and the application of both open pit and underground mining. While open pit mining was selected as the preferred technique due to low grade ore at shallow depths, the application also indicates that one of the richest ore deposits is located at depth. Again this statement appears to be contradictory. As mentioned earlier, the Rainbow Trout Recreational Fishery within Jacko Lake is likely to be negatively affected by the Project as currently proposed and the Aboriginal Spring Trout Fishery located at the outlet of Jacko Lake/Peterson Creek completely lost. Negative impacts to these fisheries are a significant concern to the Department and may pose challenges for the Department to issue a Fisheries Act Authorization, especially in the absence of any viable measure to counterbalance those effects. To further elaborate in regards to permitting, upon submission of any application for a Fisheries Act Authorization, the Department must consider the factors listed in Section 6 of the Fisheries Act prior to determining whether or not a project will be authorized. The Section 6 factors are the contribution of the relevant fish; the fisheries management

objectives; the measures and standards to avoid, mitigate or offset serious harm to fish; and the public interest. It is incumbent on the Department to identify to the Proponent as early as possible (such as during an environmental assessment) of these potential permitting challenges and ensure that a fulsome assessment of first avoidance, then mitigation, followed by offsetting are explored and rationalize to the greatest extent possible.